CHAPTER I
INTRODUCTION

1.1. Background

Technology and information advancements have a significant influence on human lives. Education is one of the effects of information and technology development. Education updates must be implemented in accordance with current circumstances. The objective is to raise educational standards so that students can successfully navigate new problems in the classroom. Thus, in order for the learning process to be successful and efficient, it must be planned, implemented, reviewed, and monitored.

Education is a deliberate and organized attempt to establish a learning environment and learning mechanism in which students can actively improve their potential in order to have religious spiritual skills, self-control, personality, intellect, moral and moral skills that are valuable for themselves, community, country, and state (1). According to Article 1 of Law No. 20 of 2003, the national education system must be capable of creating an efficient learning environment in which students can maximize their ability and attain learning outcomes that meet learning targets. Learning is a multiface process with multiple intertwined elements. The learning process is a form of communication (Daryanto, 2016). A strong communication aspect is necessary in the learning process to communicate messages from teachers to students. The message communicated by the instructor would be well received by students if there is a strong communication aspect in the learning process. Learning media is a form of contact that can be used in the learning process. Learning media is one of the instruments in the learning process that helps students meet their learning goals. Learning media is a medium of communication, both written and audible, that can assist in the communication process during the learning process. As a consequence, studying media plays an

important part. Learning without the use of communication media is not efficient, and the learning process is therefore not optimal (Budiarti and Haryanto, 2016).

Learning media is a medium that includes instructional materials in the student atmosphere that can motivate students to study. Gagne (in Daryanto, 2016) separates art into seven categories: objects to be illustrated, oral contact, written media, still photographs, moving images, sound films, and machine learning. Many different forms of learning media may be used in the learning process.

The use of media in learning exercises will facilitate students in accurately and efficiently understanding complex and complicated subject matter. The instructor will interact with students using the available media. Material that cannot be explained verbally by the teacher would be portrayed by the media used. For example, if the teacher's presentation includes photographs, a good medium to use is media that can display both images and words, such as comic books. The use of media in the classroom enhances students' interest in studying these content.

The educational process has traditionally seen students as objects to be filled with a variety of knowledge and instructional resources, which is quite a bit. The issue of meaningful learning is not adequately applied since the teacher-provided material is not grasped. Momentum and impulses are two subjects that demand discussion. Physics is a subject that is so pervasive in daily life that the majority of students are familiar with and experience it; nevertheless, the majority of students in the field are ignorant that this is a kind of physics. This is when students are typically exposed to studying content written on the inside pages of books in vocabulary that is complex and challenging for students to comprehend. Students are less interested in reading textbooks, like physics textbooks, due to the difficulty of the instructional materials provided. Yuliandari (2014) describes attempts to achieve exciting and creative learning, one of which is through the use of learning media in the teaching and learning process.

Since the teaching and learning process is primarily a communication process, the medium used in learning is referred to as learning media. Learning media is a portion of learning services, which include both software (learning materials) and hardware (learning tools). Meanwhile, according to Sudjana and Rival (2001: 7), the primary role of teaching media is as a teaching aid that promotes

the use of teachers' teaching methods. It is anticipated that the use of teaching media will improve the consistency of the teaching and learning environment, which in turn will influence the quality of student learning outcomes.

Achieving success in momentum and impulsive learning requires meaningful learning experiences. Meaningful learning experiences are those in which learners obtain knowledge that is applicable and useful in their daily lives. Students are expected to be enthusiastic and take their learning seriously when they engage in meaningful learning. To offer a realistic environment for momentum and impulsivity, it is vital to adopt a learning medium that enables students to acquire knowledge not just theoretically, but also via more realistic learning experiences. A excellent educational medium is one that can display both graphics and text. However, chapter momentum and impulses are hampered by a dearth of instructional resources. This occurs because designing learning media takes a long time, leaving teachers uninspired to build their own media to aid in the learning process, and teachers also like to utilize the same media frequently. As a result, learning occurs through unplanned media, or even in the absence of media. The other effect is that, as a result of constantly employing the same material, the learning process becomes repetitive and tedious for students.

Based on the information gathered during preliminary assessments, observations, and interviews at SMAN 2 Medan, it was discovered that the majority of the learning media only based on student handbooks. The teacher's approach of providing learning materials is most frequently achieved by instruction and interviewing and answering approaches without the use of more interesting learning tools. Lack of creativity and innovation of teachers in developing and creating learning media make students boring. Furthermore, Students less interested in reading textbooks, like physics manuals, due to the difficulty of the instructional materials provided.

As a result, there is a need for an effective solutions for teaching momentum and impulses in an engaging and easy-to-understand manner. One potential answer is to design media that is densely packed with intriguing forms, with the expectation that kids would learn on their own at home or school. Instructional media may serve as a motivator for students by focusing their attention and motivating them to

engage with the material displayed (Rusman, 2012; 163). A teacher may require learning media to aid in delivering course information.

Learning media which can be developed in accordance with thedevelopment of science and technology is comic. Comic is a cartoon that expressesthe character and act out a story in sequence closely which is associated with theimage and is designed to provide entertainment to the reader (Sudjana, 2007)According to NTV Sekai Banzuke (global ranking), Indonesia is the second-largestmanga reader (Japanese comics) behind Finland. In the United States, the averageperson who read comic books was 3.11, or around three books per person, but inFinland, the average person who read comic books was 3.59, or nearly four manganovels per person. Finland has a large manga/comic readership, owing to the factthat comics are employed as a form of education in Finland. The popularity of comicbooks encourages educators to explore this medium for educational purposes.Comics are already widely employed in a variety of disciplines, such as communityeducation campaigns in the media. Comic is utilized in educational material sinceboth the story and design are purpose-built to convey an educationalmessage.According to Widyastuti, Mardiyana, and Saputro's 2017 study "LearningMedia Using Comics in the Linear Equation Framework," comics can be used asstudent worksheets. It is well known that comics are an excellent medium for usein in and out of the classroom. It is also sufficient to save students from being bored. According to Nugrahani (2007: 43), virtual-based learning media is an effective tool for raising students' absorption and comprehension of lessons,especially difficult-to-accept learning without media intermediaries. Studentswould be most interested in learning resources that provide drawings that help them grow their creativity. Educational comics should be used to include visual-based learning media. According to Wahyuningsih (2011), students like to read picturestory books like comics rather than textbooks because comics have a consistent and

cohesive plot that is easy to remember.

Based on the description, the author intend to conduct research development entitled "The development of Comic based on inquiry model as learning media to improve student's motivation in Momentum and impulses for grade X at SMAN 2 MEDAN"

Considering the aforementioned explanation, the researcher attempts to offer an alternative by creating a physics comic to provide a more engaging physics lesson so that students are more interested in learning the content of momentum and impulses well. As a result, the researcher raised the title " The development of Comic based on inquiry model as learning media to improve student's motivation in Momentum and impulses for grade X at SMAN 2 MEDAN. "Based on the description above, the researcher tries to provide an alternative by making a physics comic so that it can present a more interesting physics lesson so that students are more interested in understanding the material of momentum and impulses well. Therefore, the researcher raised the title "The development of comic with inquiry model as learning media on momentum and impulses."

1.2. The Scope of Research

To achieve the best possible results from this research, the researcher concentrated on momentum and impulses content using comic strips with an inquiry model on student movement and learning outcomes.

1.3. Formulation of the Problem

Based on the background above, the formulation of the problem in this study are:

1. How to develop comic as a learning media in Momentum and Impulses for student of grade X at SMAN 2 Medan?
2. How is the feasibility of comic as a learning media in momentum and impulses for student of grade X at SMAN 2 Medan based on validation assesment of material expert, the media expert and practitioner learning?
3. What's the students' response to the comic as a learning media in the momentum and impulses for student of grade X at SMAN 2 Medan?
4. How's the improvement of student's motivation after using comic on Momentum and impuls for grade X at SMAN 2 Medan?

1.4. Problem Limitation

Based on the research background, the limitation of the problem in this study is the use of comic media with the inquiry model as a learning medium for momentum and impulses materials. Momentum and impulsese materials include the development of the theory of momentum and impulses.

1.5. Research Objective

Based on formulation of the problem the objectives of this research are as follow :

1. Developing comic as a learning media for the momentum and impulses for student of grade X at SMAN 2 Medan
2. Knowing the feasibility of comic as a learning media in the momentum and impulses for student of grade X at AMAN 2 Medan based on validation/ assessment of material experts, the media experts and practitioner learning.
3. Knowing the student's responses in use of Momentum and impulses comic as learning media for student of grade X at SMAN 2 MEDAN.
4. Knowing the student's motivation after using comic on Momentum and impulses for grade X at SMAN 2 MEDAN.

1.6. Research Benefit

The benefits of this research are:

1. Teachers can use it, particularly in the material of momentum and impulseses, as a learning medium in their teaching and learning process.
2. It can be used to improve information of physics for students in particular in momentum and impulses content, as a new learning aid, that can be read anywhere or anytime.
3. For researchers, it can also be used in the conduct of other research as a guide For schools, that is, being able to find out that learning media or learning resources are not only from printed books or student worksheet provided by so from learning comics.
4. For schools to recognize that educational resources or media may come from

a variety of sources, not just paper books or student worksheets but also with comics material book

1.7. Operational Definition

1. Learning is getting something new and producing changes in behavior (Milfayetty, 2018: 29).
2. Media are all physical tools that can present messages and stimulate students to learn (Sadiman, Rahardjo, Haryono & Harjito, 2014: 6).
3. Comic is a series of pictures included in the box that contains a whole series of a story (Buchori & Setyawati, 2015)
4. Inquiry is a process of obtaining and obtaining information by making observations and or experiments to find answers or solve problems to questions or problem formulation by asking and finding out.
5. Research development is an attempt to develop effective educational products in the form of learning materials, media, strategies, or other materials in learning to be used in schools not to test the theory (Gufron, Purbani, & Sumardiningsih, 2007: 5).